

REMARKS

By this Amendment, new claim 34 (patentable for reasons commensurate with those asserted herein) is added to more fully claim the disclosed invention and a revised Abstract is submitted in conformance with the rules. Claims 1-34 are pending.

The Office Action rejected claims 1-11, 13-27, and 29-33 under 35 U.S.C. § 103(a) as being unpatentable over Kay et al. (U.S. Patent No. 5,357,513; hereafter “Kay”), and claims 12 and 28 under 35 U.S.C. § 103(a) as being unpatentable over Kay in view of Björk et al. (U.S. Patent No. 6,084,862; hereafter “Björk”). Applicant traverses the rejections because the cited prior art references, analyzed individually or in combination, fail to teach or suggest all the features recited in the rejected claims.

For example, the cited prior art fails to teach or suggest the claimed transmission method, comprising “commanding at least the second subscriber terminal to adjust a transmission moment of the second signal within the determined time slot so that the at least one base station receives the transmitted first and second signals at different moments **within the same time slot,**” as recited in independent claim 1 and its dependent claims. Similarly, the cited prior art fails to teach or suggest the claimed radio system comprising “means for commanding at least the second subscriber terminal to adjust a transmission moment of the second signal to be transmitted to the at least one base station within the determined time slot so that the at least one base station receives the transmitted first and second signals at different moments **within the same time slot,**” as recited in independent claim 17 and its dependent claims.

The Office Action asserted that Kay, directed to a method for transmission power level adjustment, teaches base station commands sent so that the base station receives the transmitted first and second signals from different subscriber terminals at different moments within the same time slot. More specifically, the Office Action referred to column 12, line 43 to column 13, line 22 of Kay, asserting that a subscriber terminal is commanded to send a base station a signal that employs a timeslot and frequency used by another subscriber terminal.

As taught in that passage of Kay, a reverse control channel carries reverse requests and acknowledgments. Each time slot is divided into a tree of four sub-slots, which are referred to as Reverse ALOHA (RA) and one of which is referred to as a Reverse Response (RR). The format of sub-slots is shown in Fig. 14, which illustrates that the duration of every

part of the sub-slot is **fixed**. Kay's Fig. 15 further illustrates that each slot includes three RA sub-slots and one RR sub-slot. Indeed Kay teaches that the **types of the sub-slots are fixed**. As can be seen in Figure 15, slots are transmitted over different frequencies. Thus, Kay presents a fixed time-slot structure used **by one subscriber terminal**. In other words, the time-slot structure including sub-slots is used by **only one** subscriber terminal at a time. Therefore, Kay does not teach, disclose or suggest any another subscriber terminal would be commanded to use the time slot and frequency already used by a subscriber terminal.

In contrast, according to the claimed invention, a subscriber terminal is commanded to **adjust a transmission moment of a signal within the determined time slot** so that the base station receives the transmitted signals of **multiple subscriber terminals** at different moments **within the same time slot**. Such re-use of frequencies and time-slots more effectively increases spectral efficiency.

The Office Action referred to column 13, lines 30-46, column 15, line 8 to column 16 line 48 and column 18, lines 3-16 of Kay as allegedly teaching that a subscriber terminal is sent a command to adjust the transmission moment of a signal so that the base station receives the transmitted signals at different moments within the same time slot.

However, column 13, lines 30-46 of Kay lists different types of messages typically changed in a radio network between a subscriber terminal and a base station. However, Kay fails to teach or suggest any further details regarding those messages. Rather, it is unclear whether the acknowledge-messages are the same as is understood conventionally, i.e., a subscriber terminal tells a base station that it received a message sent by the base station.

Column 15 line 8 to column 16 line 48 of Kay actually teaches a procedure based on a random access principle for handling a situation when no free time-slots are available and a subscriber terminal requests resources in a radio network. In response to a subscriber terminal's reverse allocate request message, a BSC sends a reverse allocation acknowledgement, if a channel cannot immediately be assigned. In the event the mobile receives an acknowledgment, it simply waits with no further action. Kay also teaches a procedure to avoid the situation that a subscriber terminal does not receive a reverse deallocation acknowledgement when transmission is stopped. To avoid unnecessary load in the network, the reverse deallocation acknowledgment is sent with diversity (Figure 22) or it is sent in response to the reverse deallocation request (Figure 23).

Column 18, lines 3-16 of Kay merely discloses how a timing set command is used to adjust a subscriber terminal's transmit timing. Timing adjustment is a normal procedure to

synchronize a radio network. The target of the adjustment of a subscriber terminal's transmit timing is to avoid simultaneous transmitting and receiving in a subscriber terminal and/or keep transmission from different subscriber terminals in different time slots in the receiver of a base station.

Accordingly, Applicant submits that Kay fails to teach or suggest base station commands sent so that the base station receives the transmitted first and second signals from different subscriber terminals at different moments within the same time slot

Björk fails to remedy the deficiencies of Kay because Björk merely discloses that signals received by the base station are correlated by means of a training sequence, the signals being placed in windows and the summed energies of the impulse responses of the signals placed the window being compared.

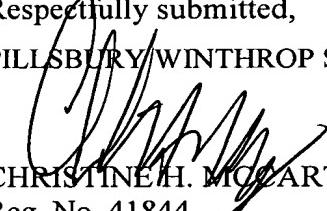
Therefore, the teachings of Kay and Björk, analyzed individually or in combination, fail to teach "commanding at least the second subscriber terminal to adjust a transmission moment of the second signal within the determined time slot so that the at least one base station receives the transmitted first and second signals at different moments within the same time slot," or "means for commanding at least the second subscriber terminal to adjust a transmission moment of the second signal to be transmitted to the at least one base station within the determined time slot so that the at least one base station receives the transmitted first and second signals at different moments within the same time slot," as recited in the rejected claims.

All objections and rejections having been addressed, Applicant requests issuance of a notice of allowance indicating the allowability of all pending claims. If anything further is necessary to place the application in condition for allowance, Applicant requests that the Examiner contact Applicant's undersigned representative at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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